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Le Tinnier

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(54) **ASSIST HANDLE FOR A VEHICLE PASSENGER COMPARTMENT**

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CPC ***B60N 3/026*** (2013.01)

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USPC 296/1.02
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(57) **ABSTRACT**

An assist handle (**10**) for a vehicle passenger compartment includes a gripping body (**12**) having at least one base (**14**) for bearing on and fastening to a wall of the passenger compartment. At least one clip (**18**) is carried by the base or each base and configured to fasten the handle to the wall. The clip is configured to be engaged at least partially in an orifice in the wall and includes at least one elastically deformable tab (**28**) configured to cooperate by elastic snap-fastening with an edge of the orifice. The clip also includes at least one first element (**30**) which is configured to cooperate by elastic snap-fastening with at least one second element (**22**) formed in one piece with the base, so as to fasten the clip to the base.

19 Claims, 10 Drawing Sheets

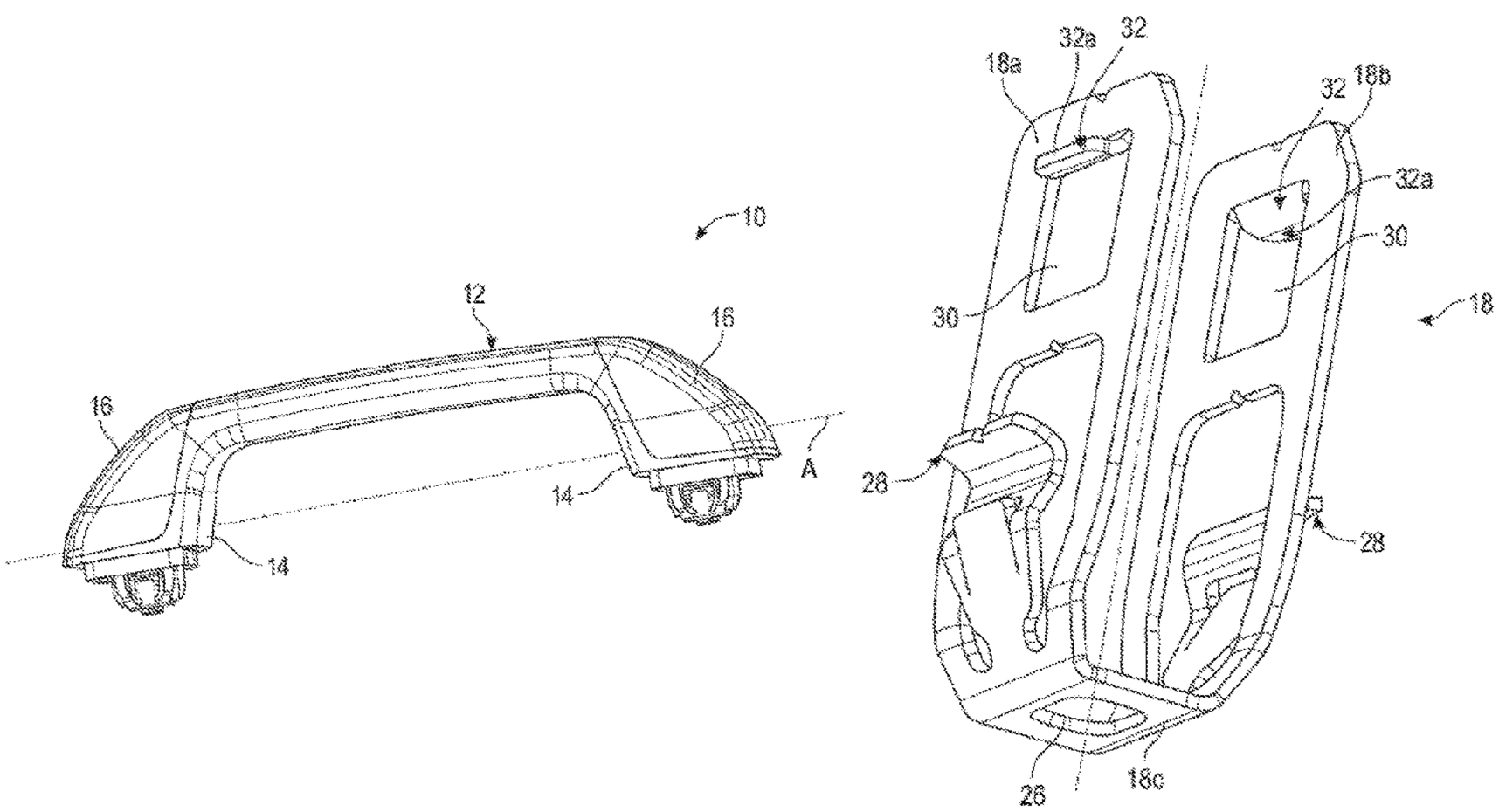

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Fig. 1

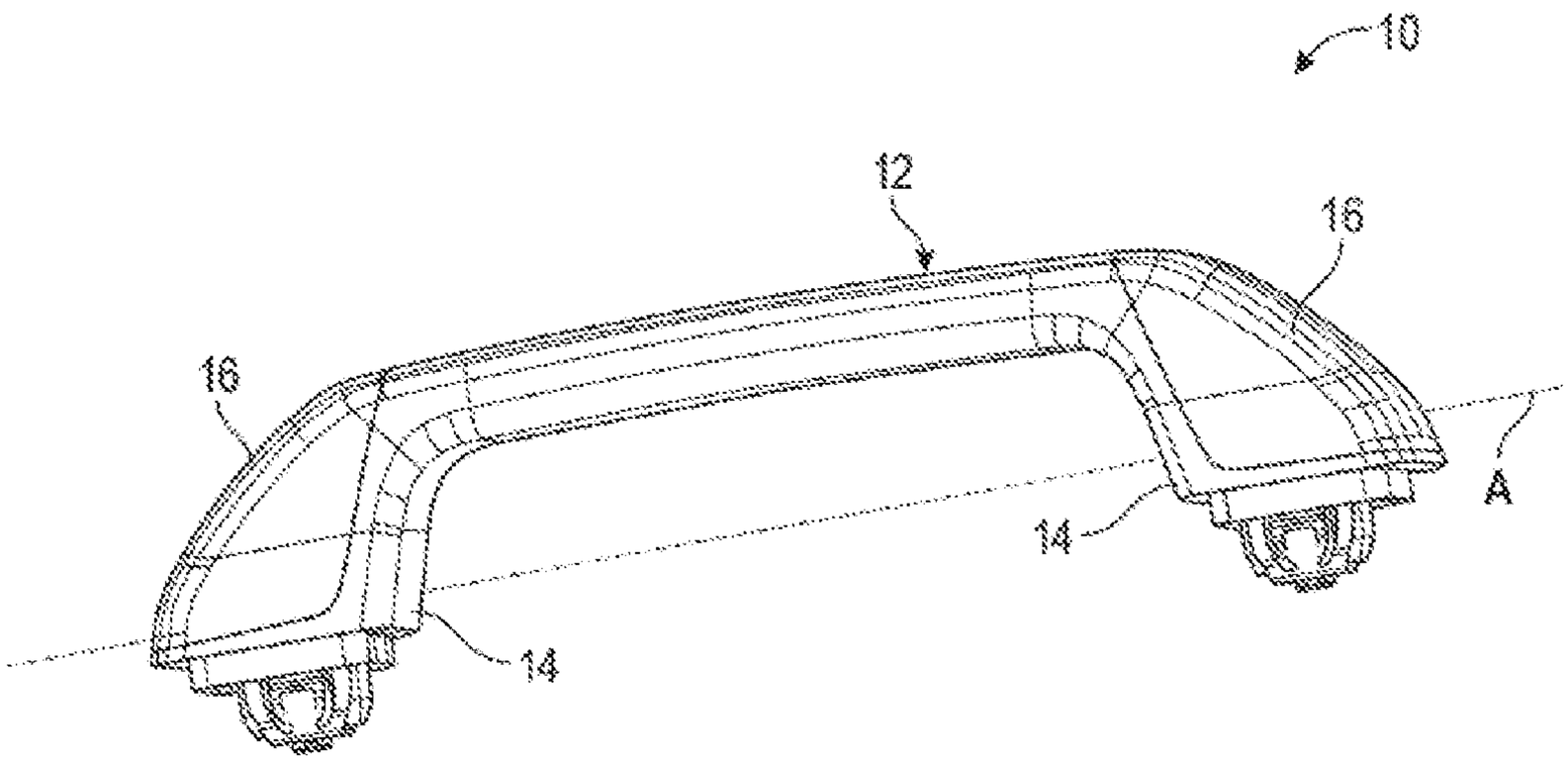


Fig. 2

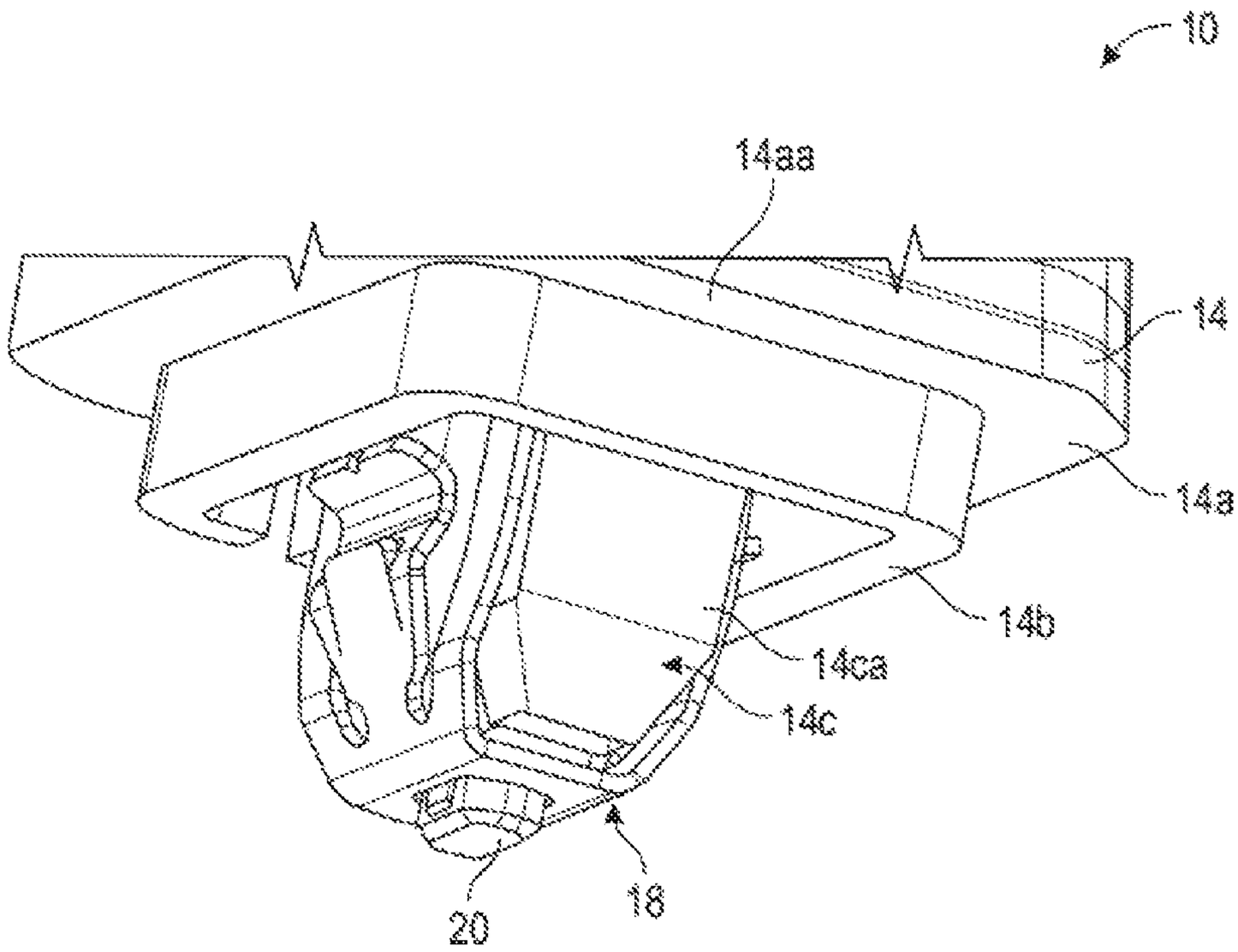


Fig. 3

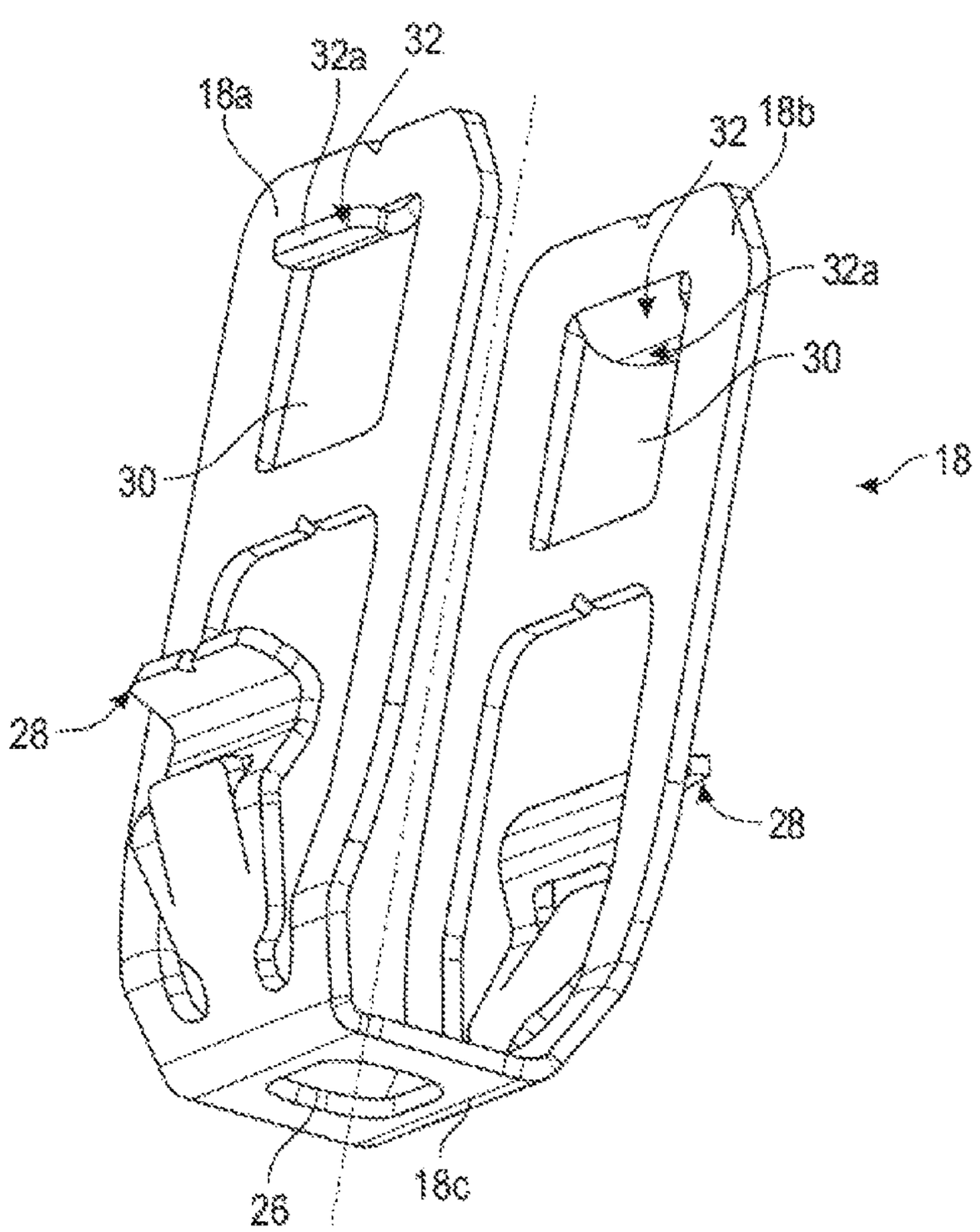


Fig. 4

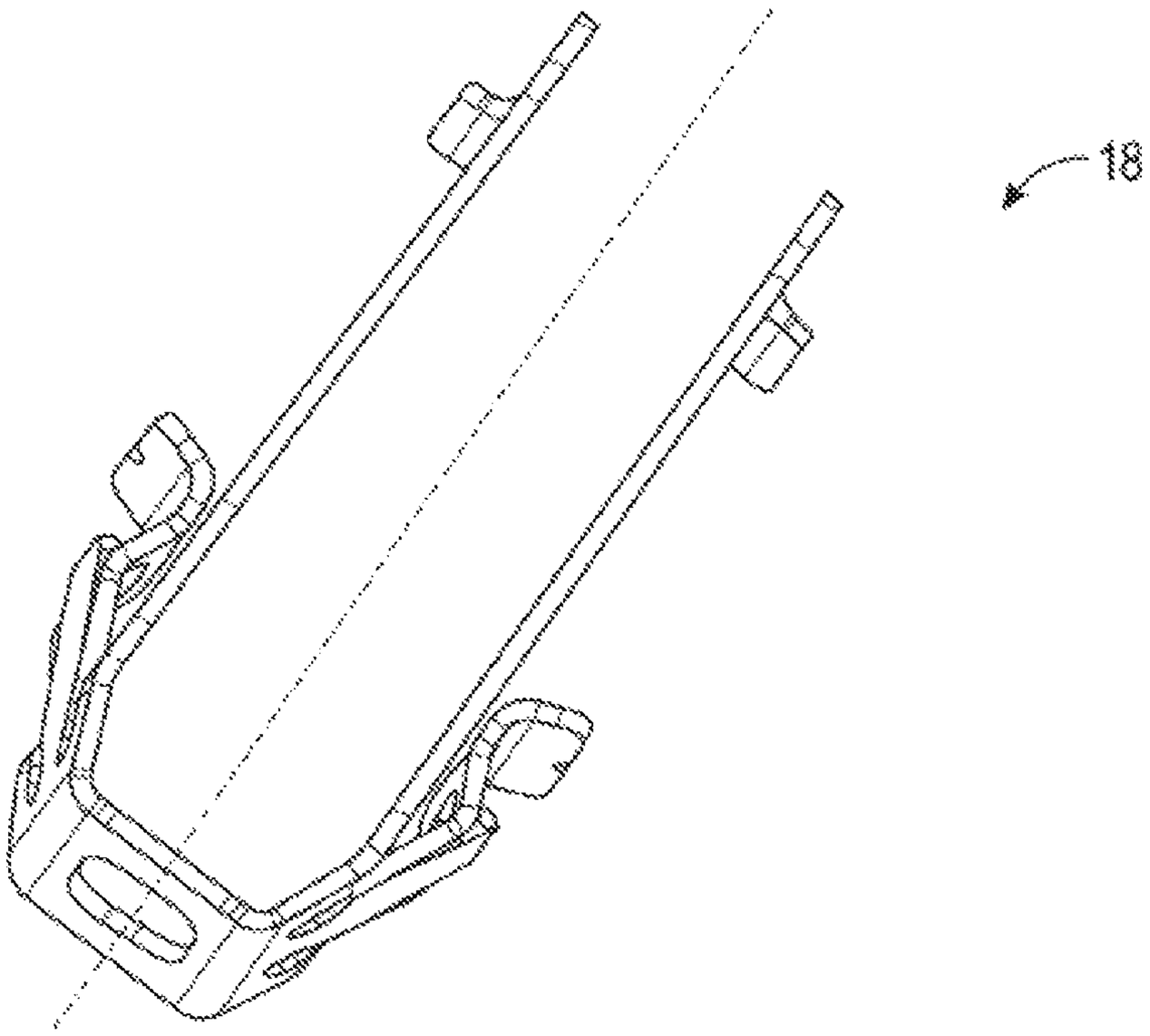


Fig. 5

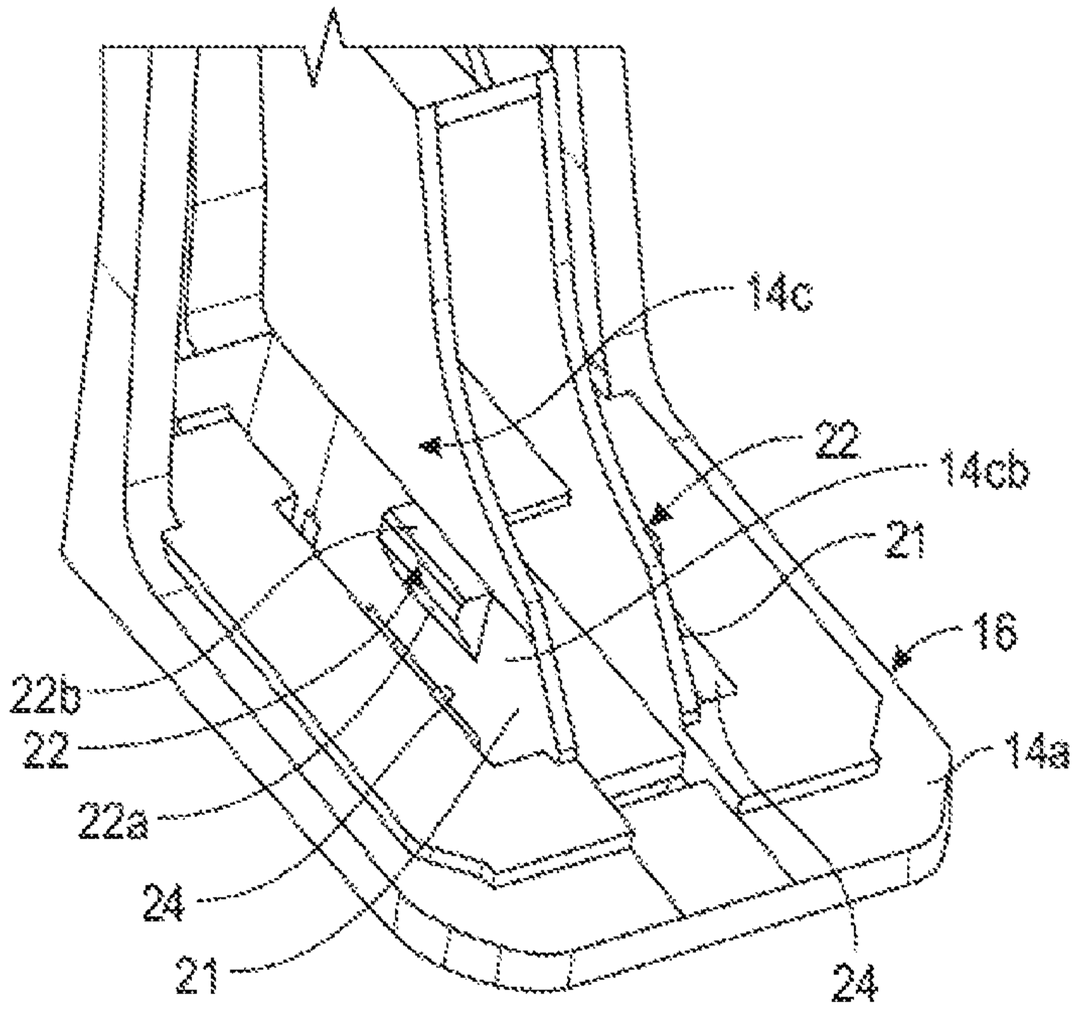


Fig. 6

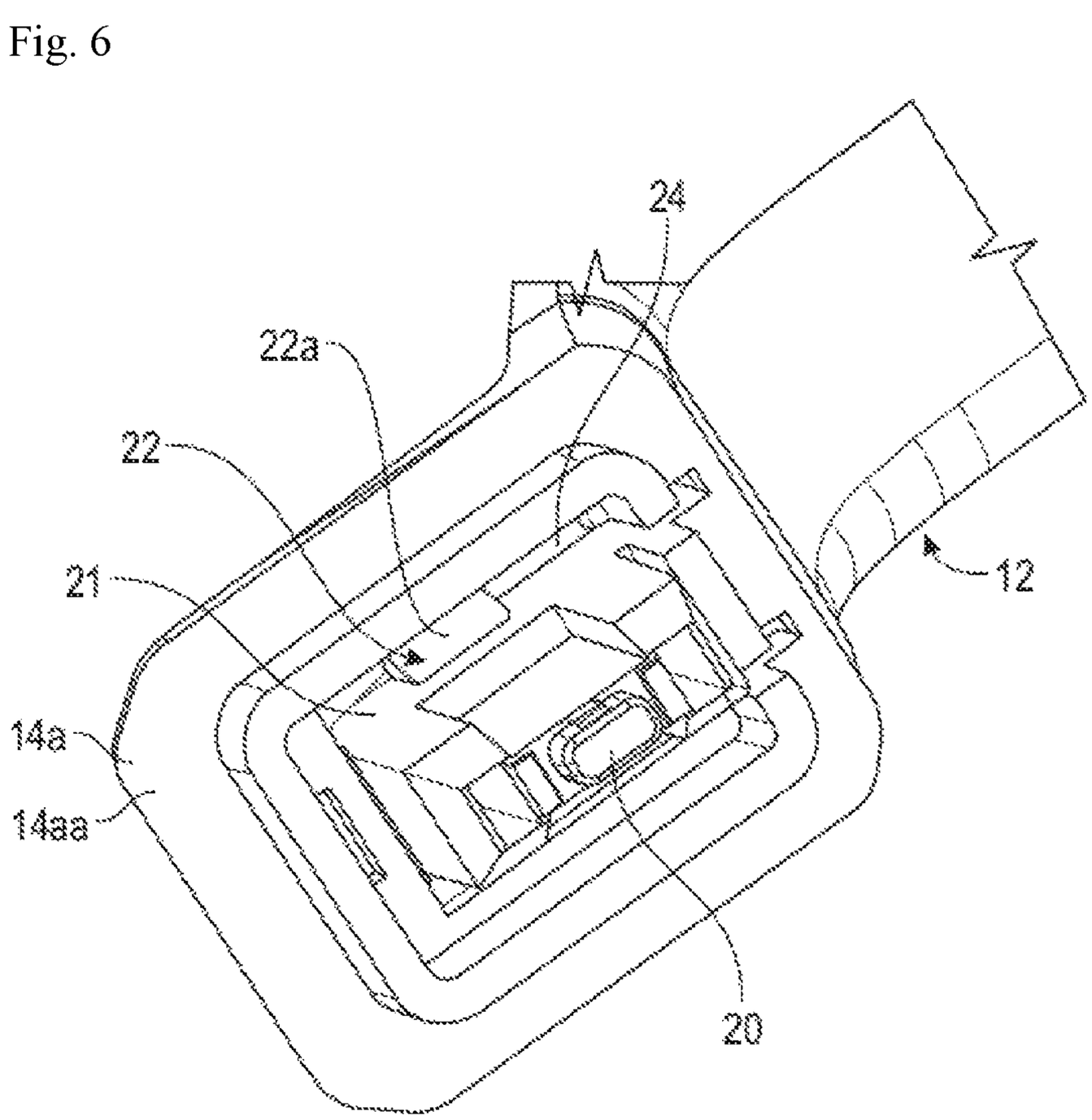


Fig. 7

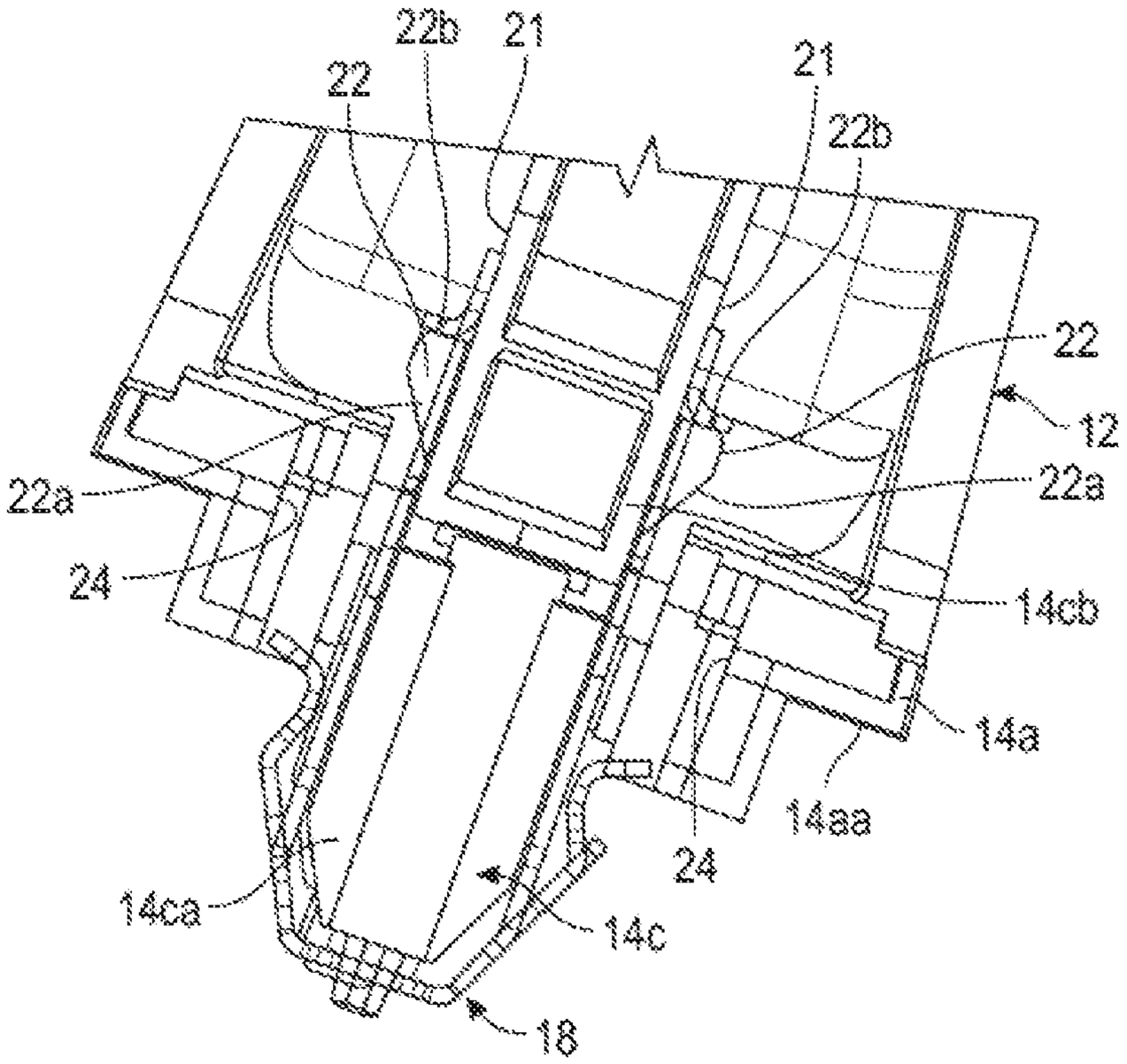


Fig. 8

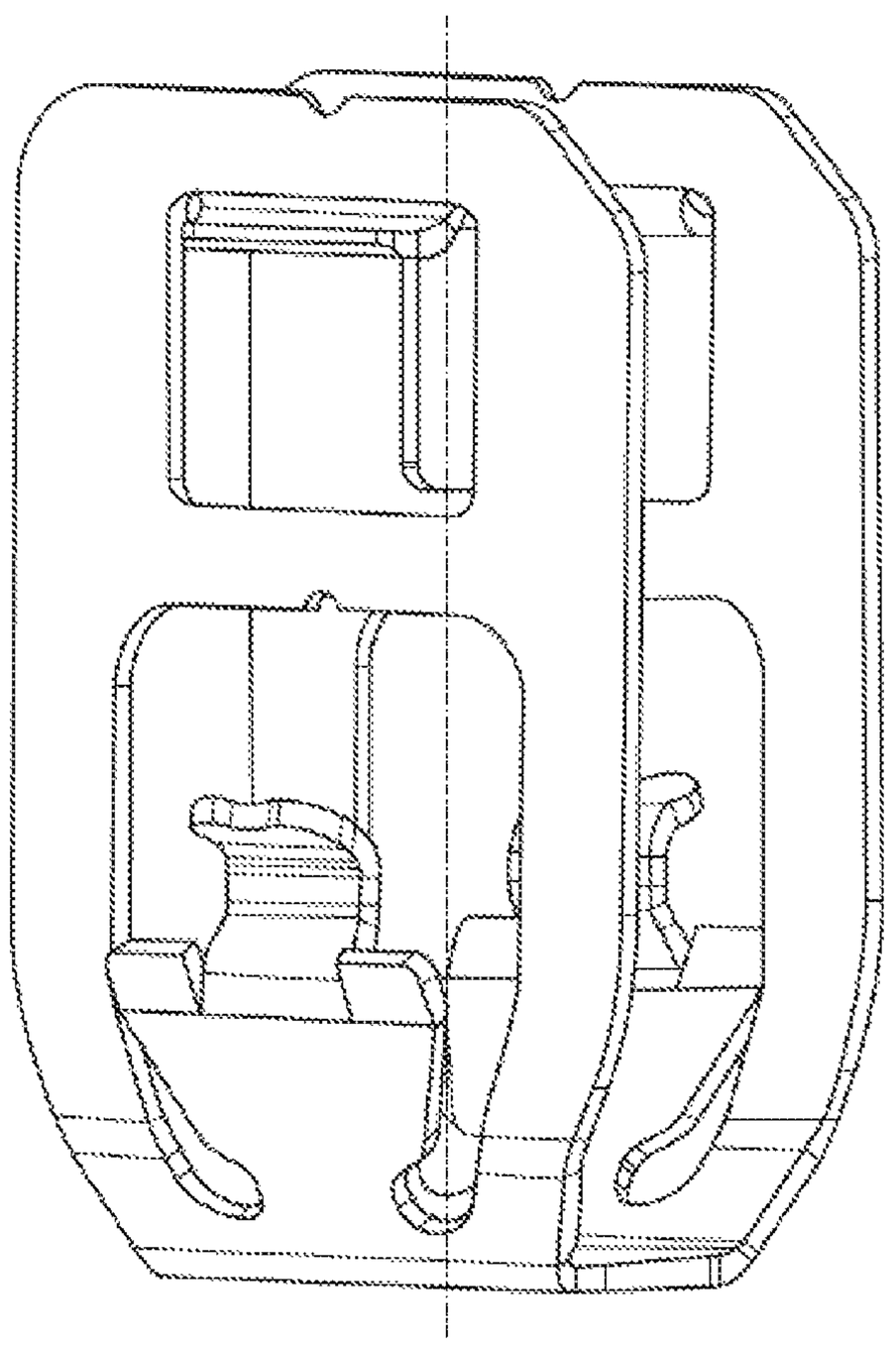


Fig. 9

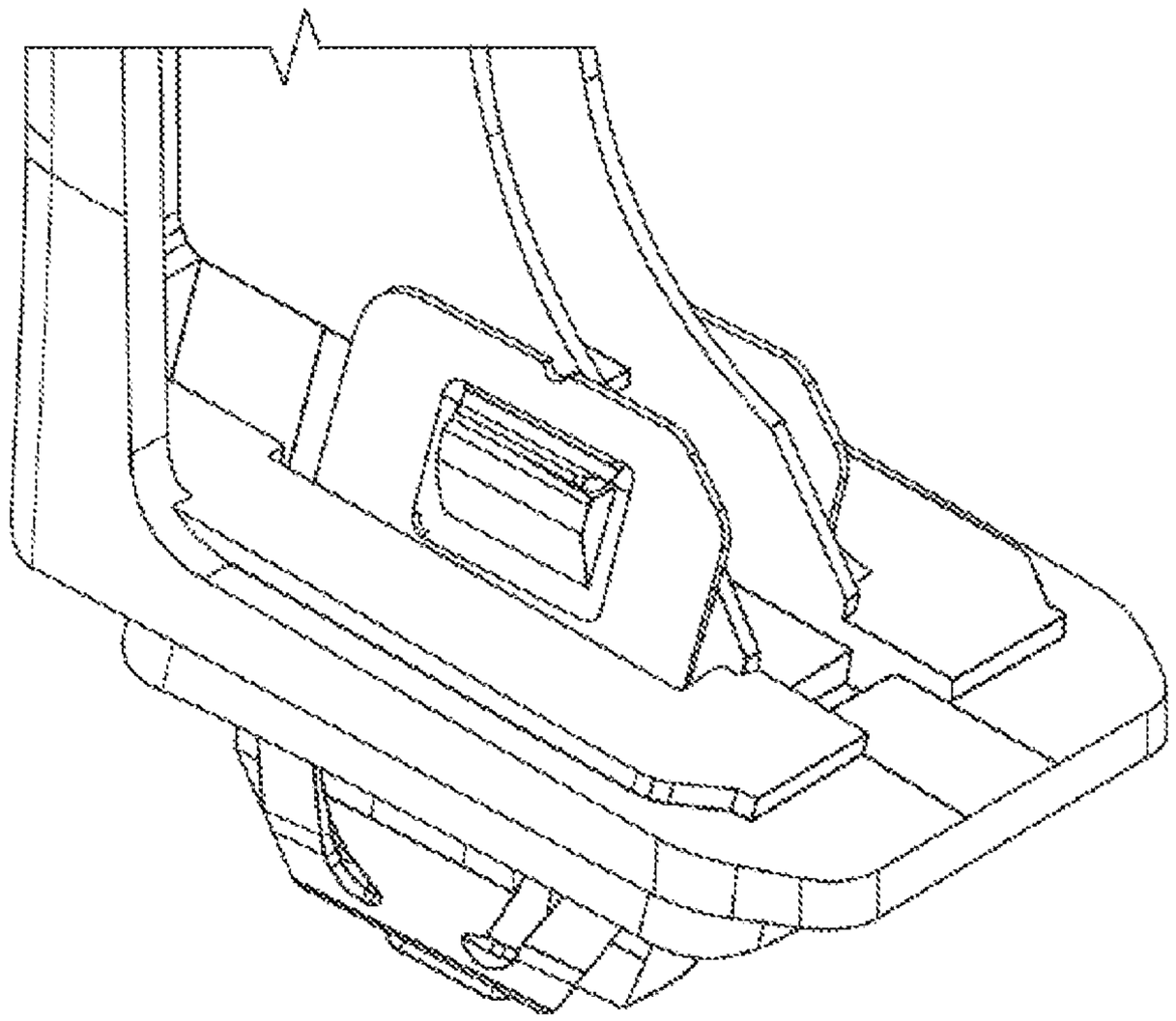
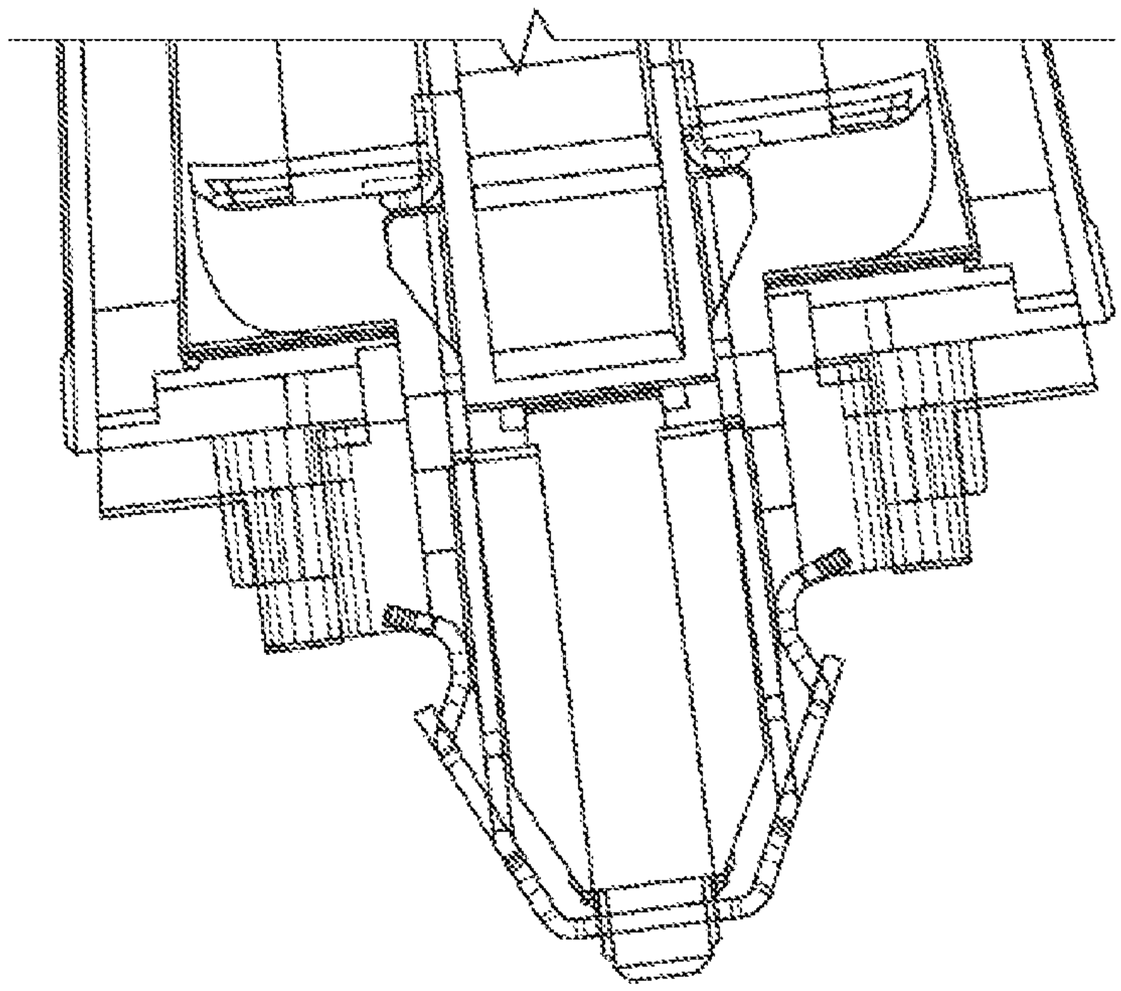


Fig. 10



ASSIST HANDLE FOR A VEHICLE PASSENGER COMPARTMENT

TECHNICAL FIELD OF THE INVENTION

The present invention relates to an assist handle for a vehicle passenger compartment, in particular for an automobile.

PRIOR ART

The passenger compartment of a vehicle is generally equipped with at least one assist handle, which is also known as a corner-turning handle. A handle of this type is, for example, located above the front passenger seat of the vehicle, just above the door opening. The handle is generally fastened directly to the vehicle bodywork.

A handle of this type comprises:

- a gripping body linked to two bases for bearing on and fastening to a wall of the bodywork, and
- a clip carried by each of the bases and configured to fasten the handle to the wall. Each clip is configured to be engaged in an orifice in the wall, generally through an opening in an interior lining of this wall, and comprises an elastically deformable tab configured to cooperate by elastic snap-fastening with an edge of the orifice in order to fasten the handle to the bodywork.

In current technology, the clip is held securely on the base by means of a member attached to the base, which may be a cover.

The assembly of a handle in current technology thus comprises a step of mounting the clips on the bases of the body and a following step of mounting members for securing the clips to the bases. Assembly is thus relatively long for a relatively simple article. Furthermore, there is a risk of the members being mounted defectively and of accidental loss of these members in the course of use of the handle.

The present invention proposes a simple, effective and economical solution to these problems.

SUMMARY OF THE INVENTION

To that end, the invention proposes an assist handle for a vehicle passenger compartment, having:

- a gripping body having at least one base for bearing on and fastening to a wall of the passenger compartment, and
- at least one clip carried by the base or each base and configured to fasten the handle to said wall, this clip being configured to be engaged at least partially in an orifice in the wall and having at least one elastically deformable tab configured to cooperate by elastic snap-fastening with an edge of this orifice,

characterized in that the clip also comprises at least one first element which is configured to cooperate by elastic snap-fastening with at least one second element formed in one piece with the base, so as to fasten the clip to the base.

The handle according to the invention thus does not comprise an attached member designed to secure the clip to the body. Indeed, the clip is, here, configured to cooperate with a part of the body, and in particular a part of the base of the body, which is formed in one piece with this base. Mounting of the clip and also the assembly of a handle according to the invention are thus simplified and there is no likelihood of defective mounting or of loss of the clip during use.

The handle according to the invention may comprise one or more of the following features, taken separately from one another or in combination with one another:

- the clip has the overall shape of a U and comprises two lateral arms linked by a bridge,
- said at least one tab is situated on one or each of said arms,
- said at least one first element is situated on one or each of said arms,
- said at least one first element comprises an orifice,
- said orifice comprises a peripheral edge, a rectilinear portion of which is defined by an L-shaped lip of the clip,
- said at least one second element comprises a boss configured to be engaged in said orifice, this boss having a ramp on which the clip is configured to slide, and also a stop against which the clip is configured to bear in order to prevent it from detaching from the base,
- the base has a low wall which is engaged in the clip and between the arms thereof, this low wall having two opposite lateral surfaces, on each of which said protruding boss is situated,
- the bridge of the clip comprises an orifice for receiving a finger of the base,
- the clip has a plane of symmetry that is parallel to the arms and passes between these arms,
- the clip is formed in one piece, preferably from sheet metal,
- the handle also comprises at least one cover attached to the base or each base of the body.

BRIEF DESCRIPTION OF THE FIGURES

The invention will be better understood and further details, features and advantages of the invention will become more clearly apparent upon reading the following description that is given by way of nonlimiting example and with reference to the appended figures, in which:

FIG. **1** is a schematic perspective view of an assist handle according to one embodiment of the invention,

FIG. **2** is a schematic perspective view, on a larger scale, of a base of the handle of FIG. **1**, this base being equipped with a fastening clip,

FIG. **3** is a schematic perspective view of a fastening clip for the handle of FIG. **1**,

FIG. **4** is another schematic perspective view of a fastening clip for the handle of FIG. **1**,

FIG. **5** is another schematic perspective view of the base of the handle of FIG. **1**, without the clip,

FIG. **6** is another schematic perspective view of the base of the handle of FIG. **1**, without the clip,

FIG. **7** is a schematic view in cross section and in perspective of the base of the handle of FIG. **1**, equipped with the clip,

FIG. **8** is a schematic perspective view of a clip for a handle according to a variant embodiment of the invention,

FIG. **9** is a schematic perspective view of a base for the variant embodiment of the handle, this base being equipped with the clip of FIG. **8**, and

FIG. **10** is a schematic view in cross section and in perspective of the base of the handle of FIG. **9**, equipped with the clip.

DETAILED DESCRIPTION OF THE INVENTION

FIGS. **1** to **7** illustrate a first embodiment of an assist handle **10** according to the invention.

The handle **10** is designed to equip a passenger compartment of a vehicle, in particular an automobile, and is, for example, fastened to the vehicle bodywork, just above the opening of the front door located on the passenger side of the vehicle.

In the exemplary embodiment shown in the drawings, the handle **10** has a gripping body **12** that has two bases **14** for bearing on and fastening to the bodywork. The body has an elongate form and the bases **14** are located at the longitudinal ends of the body. However, the number of bases **14** is not limiting. Furthermore, although the bases **14** are, here, formed in one piece with the body **12** of the handle, this aspect is, here, likewise not limiting. By way of example, the body **12** may be articulated to the bases **14** about a common axis, referenced A by way of illustration, such as to be able to be folded down when the handle **10** is not in use, in order to limit the space it requires in the vehicle passenger compartment.

In the example shown, each base **14** receives a cover **16** designed to improve the aesthetic appearance of the handle **10** and to conceal a fastening clip **18** mounted on each base **14**.

Each base **14** comprises a planar wall **14***a*, a lower surface **14***aa* of which is designed to bear on the bodywork or on an interior lining of this bodywork, and also a shoe **14***b* projecting from the surface **14***aa* and designed to be engaged in an orifice of complementary form in the bodywork.

In the example shown, the shoe **14***b* has an overall U or O form and is designed to extend along at least a part of the peripheral edge of the orifice in the bodywork in order to cooperate by abutment with this edge and thereby to ensure that the handle is held in position in a plane parallel to the wall **14***a*.

The base **14** further comprises a low wall **14***c* that extends in a plane perpendicular to the wall **14***a* and a first, lower part **14***ca* of which is located below the wall **14***a* and a second, upper part **14***cb* of which is located above the wall **14***a*.

The lower part **14***ca* of the low wall **14***c* has, at the lower free end thereof, a projecting finger **20**. The upper part **14***cb* comprises two opposite parallel lateral faces **21**, on each of which there is a projecting boss **22**.

Each boss **22** comprises a ramp **22***a* and a stop **22***b*. The ramp **22***a* has a gradient that is, here, continuous and oriented downwards. The lower end of the ramp **22***a* is located at the corresponding face **21**, and the stop **22***b* is located at the upper end of the ramp **22***a* that links this upper end to the face **21**. This stop **22***b* comprises a surface oriented perpendicularly to the face **21**.

The low wall **14***c* has a plane of symmetry parallel to the faces **21** and passes between these faces.

The wall **14***a* comprises two apertures **24** of elongate form that are parallel and arranged on each side of the low wall **14***c*. The apertures **24** extend along the faces **21** and traverse the wall **14***a* so that the faces **21** extend continuously as far as the lower free end of the low wall **14***c*, which comprises the finger **20**, and which may be formed as a point as in the example shown.

The clip **18** is easier to see in FIGS. **3** and **4**. It has an overall U form and may be produced from sheet metal. It may, for example, be formed by bending and/or stamping a metal sheet.

The clip **18** comprises two lateral arms **18***a*, **18***b* linked to one another by a bridge **18***c*.

The bridge **18***c* comprises an orifice **26** configured to receive the finger **20** of the low wall **14***c* of the base **14**.

The arms **18***a*, **18***b* have, on the one hand, elastically deformable tabs **28** and first elements configured to cooperate by elastic snap-fastening with second elements formed in one piece with the base **14**. In the example shown, these second elements are formed by the bosses **22** and the first elements of the clip **18** are formed by orifices **30** of the arms **18***a*, **18***b*. In a variant, the reverse could be envisaged, namely the clip could comprise bosses or additional tabs designed to be engaged by elastic snap-fastening in recesses in the low wall of the base.

The tabs **28** are formed to cooperate by elastic snap-fastening with a peripheral edge of the orifice in the bodywork in which the lower part of the low wall **14***c* is designed to be engaged. The form of these tabs **28** is not limiting, as is illustrated with the variant embodiment in FIGS. **8** to **10**.

The tabs **28** are located in a lower half of the arms **18***a*, **18***b* of the clip **18** and the orifices **30** are located in an upper half of these arms.

In the example shown, each orifice **30** has an overall rectangular shape that substantially complements that of a boss **22** in order to allow the engagement of the boss in this orifice. The orifice **30** is delimited by a peripheral edge that is thus rectangular and a rectilinear portion of which, in this case an upper portion of which, is formed by an L-shaped lip **32**. This L-shaped lip may be obtained by folding. It comprises, here, a flange **32***a* oriented towards the exterior (the interior being located between the arms **18***a*, **18***b*), and which comprises a lower bearing surface.

The clip **18** has a plane of symmetry parallel to the arms **18***a*, **18***b* and passes between these arms.

The clip **18** is mounted on the base **14** by engaging the low wall **14***c* between the arms **18***a*, **18***b* until such time as, on the one hand, the finger **20** engages in the orifice **20** of the clip **18** and, on the other, the arms **18***a*, **18***b* slide over the faces **21** and the ramps **22***a* until the bosses **22** are engaged in the orifices **30** and the lip **32** bears on the stops **22***b* of the bosses. The clip is elastically snap-fastened on the base by elastic deformation of the arms **18***a*, **18***b*, at the time of their sliding over the ramps of the bosses, and elastic return of the arms bearing on the faces **21** when the lips cooperate with the stops **22***b* of the ramps.

The invention claimed is:

1. An assist handle (**10**) for a vehicle passenger compartment, comprising:

a gripping body (**12**) having spaced apart first and second bases (**14**) for bearing on and fastening to a wall of the passenger compartment and an elongated grip section extending between the first and second bases, and

a clip (**18**) carried by the first base and configured to fasten the assist handle to said wall, the clip being configured to be engaged at least partially in an orifice in the wall and having at least one elastically deformable tab (**28**) configured to cooperate by elastic snap-fastening with an edge of the orifice,

wherein the clip also comprises at least one first element (**30**) and the first base also comprises at least one second element (**22**), wherein the at least one first element is configured to cooperate by elastic snap-fastening with the at least one second element (**22**) so as to fasten the clip to the first base, wherein the elongated grip section, the first and second bases and the at least one second element are all formed together in one piece.

2. The assist handle (**10**) according to claim **1**, wherein the clip (**18**) has an overall shape of a U and comprises two lateral arms (**18***a*, **18***b*) linked by a bridge (**18***c*).

3. The assist handle (**10**) according to claim **2**, wherein said at least one tab (**28**) is situated on one or each of said lateral arms (**18***a*, **18***b*).

4. The assist handle (**10**) according to claim **3**, wherein said at least one first element (**30**) is situated on one or each of said lateral arms (**18***a*, **18***b*).

5. The assist handle (**10**) according to claim **4**, wherein the bridge (**18***c*) of the clip (**18**) comprises an orifice (**26**) for receiving a finger (**20**) of the base (**14**).

6. The assist handle (**10**) according to claim **2**, wherein the clip (**18**) has a plane of symmetry that is parallel to the lateral arms (**18***a*, **18***b*) and passes between the lateral arms.

7. The assist handle (**10**) according to claim **1**, wherein said at least one first element comprises an orifice (**30**).

8. The assist handle (**10**) according to claim **7**, wherein said orifice comprises a peripheral edge, a rectilinear portion of which is defined by an L-shaped lip (**32**) of the clip (**18**).

9. The assist handle (**10**) according to claim **8**, wherein said at least one second element comprises a boss (**22**) configured to be engaged in said orifice (**30**), this boss having a ramp (**22***a*) on which the clip (**18**) is configured to slide, and also a stop (**22***b*) against which the clip is configured to bear in order to prevent the clip from detaching from the base (**14**).

10. The assist handle (**10**) according to claim **9**, wherein the base has a low wall (**14***c*) which is engaged in the clip (**18**) and between the arms (**18***a*, **18***b*) thereof, this low wall having two opposite lateral surfaces (**21**), on each of which said protruding boss (**22**) is situated.

11. The assist handle (**10**) according to claim **1**, wherein the clip (**18**) is formed in one piece from sheet metal.

12. The assist handle (**10**) according to claim **1**, further comprising a first cover (**16**) attached to the first base (**14**) and a second cover (**16**) attached to the second base.

13. An assist handle (**10**) for a vehicle passenger compartment, comprising:

a gripping body (**12**) having a base (**14**) for bearing on and fastening to a wall of the passenger compartment, and

a clip (**18**) carried by the base and configured to fasten the assist handle to said wall, the clip being configured to be engaged at least partially in an orifice in the wall and having at least one elastically deformable tab (**28**) configured to cooperate by elastic snap-fastening with an edge of this orifice,

wherein the clip also comprises at least one first element (**30**) which is configured to cooperate by elastic snap-fastening with at least one second element (**22**) formed in one piece with the base, so as to fasten the clip to the base;

wherein said at least one first element comprises an orifice (**30**);

wherein said at least one second element comprises a boss (**22**) configured to be engaged in said orifice (**30**) of said at least one first element, the boss having a ramp (**22***a*) on which the clip (**18**) is configured to slide, and also a stop (**22***b*) against which the clip is configured to bear in order to prevent the clip from detaching from the base (**14**).

14. The assist handle (**10**) according to claim **13**, wherein the clip (**18**) has an overall shape of a U and comprises two lateral arms (**18***a*, **18***b*) linked by a bridge (**18***c*).

15. The assist handle (**10**) according to claim **14**, wherein said at least one tab (**28**) is situated on one or each of said lateral arms (**18***a*, **18***b*).

16. The assist handle (**10**) according to claim **15**, wherein said at least one first element (**30**) is situated on one or each of said lateral arms (**18***a*, **18***b*).

17. The assist handle (**10**) according to claim **16**, wherein the bridge (**18***c*) of the clip (**18**) comprises an orifice (**26**) for receiving a finger (**20**) of the base (**14**).

18. The assist handle (**10**) according to claim **14**, wherein the clip (**18**) has a plane of symmetry that is parallel to the lateral arms (**18***a*, **18***b*) and passes between the lateral arms.

19. The assist handle (**10**) according to claim **13**, further comprising at least one cover (**16**) attached to the base (**14**).

* * * * *